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AUTHOR	Doob, Heather S.
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ABSTRACT

In periods of rising costs and changing economic conditions, school administrators are faced with difficult problems in projecting school budgets, estimating probable cost increases, and determining salary needs of school personnel. The Bureau of Labor Statistics of the U.S. Department of Labor offers information that can be of value to school administrators. This pamphlet describes various types of information that can be obtained from the periodicals and press releases of the Bureau of Labor Statistics and outlines some ways that these data may be used by educators. (Author)

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ERS INFORMATION AID

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USING THE CONSUMER AND WHOLESALE PRICE INDEXES TO ESTIMATE SCHOOL COSTS

In periods of rising costs and changing economic conditions, school administrators are faced with difficult problems in projecting school budgets, estimating probable cost increases, and determining salary needs of school personnel. The Bureau of Labor Statistics of the U.S. Department of Labor offers information that can be of value to school administrators. This *ERS Information Aid* describes various types of information that can be obtained from the periodicals and press releases of the Bureau of Labor Statistics and outlines some ways that these data may be used by educators.

The Consumer Price Index

The most widely used economic indicator of changes in retail prices is the Consumer Price Index for Urban Wage Earners and Clerical Workers. This index, popularly known as the "cost-of-living index," is a measure of average price changes in 400 selected items purchased for consumption by wage and clerical workers in 56 representative urban areas with populations of 2,500 or more. The Consumer Price Index (CPI) is used widely as a measure of relative change in the economic position of the general population. It also is used in measuring relative changes in the purchasing power of personnel employed in many businesses, industries, and governmental agencies. The Consumer Price Index is currently under extensive revision; a new series of indexes is expected to be released in 1976.

How the Index Is Used. The Consumer Price Index, as its name implies, is a numerical indicator of change in the prices of consumer goods and services at points in time compared with a base point in time. The Bureau of Labor Statistics has changed the base year of the Consumer Price Index several times since its inception in 1913. The current base year is 1967 which was adopted in 1971. Thus, the price of consumer goods and services in 1967 is arbitrarily assigned an index number of 100.0 as shown on Table 1.

Table 1 shows that by 1968, the same set of goods and services cost 4.2 percent more than in 1967; hence, the index for 1968 is 104.2. The index for 1972 is 125.3, indicating that prices had increased 25.3 percent above those in the base year 1967.

Subtracting 100.0 from a larger index gives the percent of increase above the base year. But subtracting indexes for periods other than the base year will not yield the percent change over the period--rather, only the index point change.

Changes in consumer prices should be expressed as percent changes rather than as index point changes since index point changes are affected by the level of the index in relation to its base. Percent changes are not affected in this way. Shown in Table 2 is an illustration of this distortion and the proper way to compute percent changes as recommended by the Bureau of Labor Statistics. Thus, the percent increase in prices between 1970 and 1972 was 7.7 percent instead of 9.0 percent. It is true that the Consumer Price Index rose by 9.0 index points between 1970 and 1972, but this use of the index exaggerates the increase and does not properly measure the change in the cost of living during the two year period.

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TABLE 1

CONSUMER PRICE INDEX AND ANNUAL AVERAGE PERCENT CHANGE, 1964-72 (1967 = 100)*

Year	Consumer prices					
	All items		Commodities		Services	
	Index	Percent change	Index	Percent change	Index	Percent change
1964	92.9	1.3	94.6	1.1	90.2	1.9
1965	94.5	1.7	95.7	1.2	92.2	2.2
1966	97.2	2.9	98.2	2.6	95.8	3.9
1967	100.0	2.9	100.0	1.8	100.0	4.4
1968	104.2	4.2	103.7	3.7	105.2	5.2
1969	109.8	5.4	108.4	4.5	112.5	6.9
1970	116.3	5.9	113.5	4.7	121.6	8.1
1971	121.3	4.3	117.4	3.4	128.4	5.6
1972	125.3	3.3	120.9	3.0	133.3	3.8

*Source: U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review*, (October, 1973), p. 104.

TABLE 2

INDEX POINT CHANGE AND PERCENT CHANGE

Index Point Change	
Consumer Price Index for 1972	125.3
Less Consumer Price Index for 1970	116.3
Equals index point change	9.0
Percent Change	
Index point difference (1972 less 1970)	9.0
Divided by 1970 index (116.3) equals	0.077
Result multiplied by one hundred	0.077 x 100
Equals percent change (1970-1972)	7.7

Current Price Changes. When analyzing current price trends for periods of less than a year, the Bureau of Labor Statistics recommends use of seasonally-adjusted figures, which eliminate the effect of normal price variation resulting from climatic changes, cyclical production, model changeovers, and other predictable seasonal factors.

Table 3 is an example of the kinds of current information available from the Bureau of Labor Statistics. It presents price data for September 1973 and illustrates the difference between seasonally-adjusted and unadjusted price variations. For instance, the seasonally-adjusted percent increase for commodities from August 1973 to September 1973 was 0.1 percent, while the unadjusted percent change was 0.6 percent. The unadjusted percent change in food prices from August to September was -0.7, while the seasonally adjusted percent of change was -0.1.

Long Range vs. Short Range Comparisions. Chart 1 graphically illustrates the more rapid increase in prices in mid-1973 and contrasts them with the slower price increases of previous years. It indicates that the Consumer Price Index for all items was 135.5 in September 1973 and shows the rate of price change for all items from 1964 to September 1973. The September rate of price increase was 0.3 percent when measured over a one month span (from the previous month), 10.3 percent when measured over a three month span, 8.8 percent when measured over a six month span, and 7.4 percent when measured over a twelve month period. As can be seen, the rate of increase declined from August to September 1973. The July to August 1973 rate of increase measured over a one month span was 1.9 percent, while the August to September percent rate of increase was 0.3.

Purchasing Power of the Dollar. Another way to approach price comparisons over a period of time is in terms of the relative purchasing power of the dollar. Estimates of the dollar's purchasing power are a byproduct of the Consumer Price Index and are the reciprocal of the CPI. For example, the CPI was 125.3 in 1972 (see Table 1), which is to say prices were 25.3 percent higher than they were in the base year 1967 (equals 100.0). Another way of expressing this comparison is: It took $1.25 in 1972 to buy the same goods and services purchased for $1.00 in 1967. But most purchasing power comparisons are stated in reverse. The reverse statement is: The 1972 dollar was worth only 80 cents ($0.798) in terms of its 1967 purchasing power. To compute the purchasing power of dollars for a specific year in terms of their value in the base year of the CPI, one needs merely to divide the base year index of 100.0 by the CPI for the desired year, in this case 1972 (100.0 ÷ 125.3 = 0.798).

To compare the purchasing power of dollars between two years (e.g., 1970 and 1972), one of which is not the CPI base year, the procedure in Table 4 may be used. Thus, between 1970 and 1972 the consumer purchasing power of the dollar dropped 6.2 cents in terms of 1967 dollar values.

Consumer Price Index for Selected Cities. The Bureau of Labor Statistics also publishes a Consumer Price Index for selected representative urban areas. Monthly figures are published for five urban areas: New York, Los Angeles, Chicago, Detroit, and Philadelphia. Quarterly figures are published for these and eighteen other major metropolitan centers, as shown in Table 5.

Like the national Consumer Price Index, the Consumer Price Index for selected cities measures only varying rates of price change within a given metropolitan area. *It cannot be used to measure price differences among areas.*

As shown in Table 5, from September 1972 to September 1973 the average price increase in all U.S. cities was 7.4 percent. Of the five urban areas for which data are reported monthly, Detroit had the largest increase (7.9 percent) during the 12-month span while Los Angeles/Long Beach had the smallest increase (6.0 percent). This does not mean that prices were higher in Detroit; rather, that they increased faster.

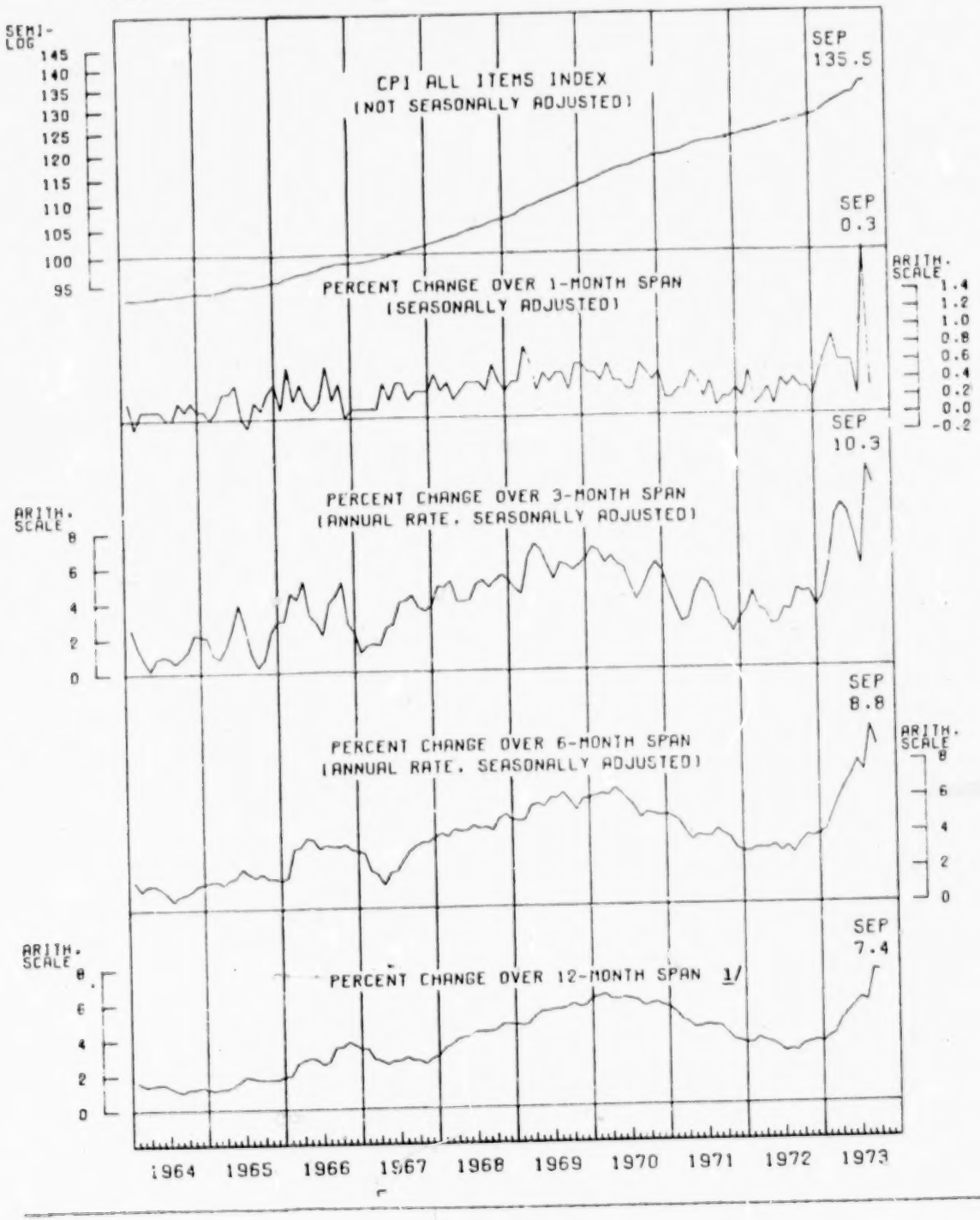
Group	Unadjusted indexes (1967=100 unless otherwise noted)		Unadjusted percent change to September 1973 from—		Seasonally adjusted percent change from—		
	August 1973	September 1973	September 1972	August 1973	June to July	July to August	August to September
Commodity and service groups							
All items	135.1	135.5	7.4	0.3	0.2	1.9	0.3
All items (1957-59=100)	157.1	157.6	*	*	*	*	*
Commodities	132.8	132.8	8.9	0	.6	2.8	0
Food	149.4	148.3	18.6	- .7	.3	6.1	- .7
Food at home	151.1	149.8	20.3	- .9	.4	7.1	- .9
Cereals and bakery products	134.7	132.4	10.5	- 1.7	.1	2.1	- 1.7
Meats, poultry, and fish	154.0	150.2	17.7	- 2.5	- .1	10.1	- 2.4
Dairy products	125.6	130.3	14.3	3.7	.8	2.0*	3.7*
Fruits and vegetables	152.6	147.5	9.2	- 3.3	1.9	1.1	- 3.3
Other foods at home	133.1	135.7	15.6	2.0	.2	2.1	2.0
Food away from home	142.4	143.1	9.5	.5	.2	3.0	.5
Commodities less food	123.8	124.3	4.3	.4	.7	.3	.4
Nondurables less food	124.7	125.9	5.7	.6	.1	.2	.6
Apparel commodities 1/	126.6	128.7	4.2	1.7	.1	1.0	1.7
Men's and boys'	126.1	127.4	3.9	1.0	.1	.8	1.0
Women's and girls'	128.0	130.5	4.6	2.0	.1	1.4	2.0
Footwear	130.8	131.3	5.1	.4	.1	.4	.4
Nondurables less food and apparel	124.6	124.8	3.8	.2	.1	0	.2
Gasoline and motor oil	117.4	118.6	6.4	1.0	.2	- .3	1.0
Tobacco products	137.6	138.0	2.6	.3	.1*	0*	.3*
Alcoholic beverages	122.6	121.2	2.1	- 1.1	.1*	- 1.1*	- 1.1*
Fuel oil and coal	142.8	141.6	14.2	- .8	.1	.4	- .8
Other nondurables	120.9	121.1	3.3	.2	.2	.2	.2
Durable commodities	122.6	122.6	2.3	0	.2	.3	0
Household durables	119.6	120.1	1.9	.4	.1	.1	.4
New cars	110.6	109.1	- .1	- 1.4	.1	.4	- 1.4
Used cars	127.1	129.3	5.9	1.7	.1	.4	1.7
Other durables	128.2	129.2	1.3	.8	.1*	.1*	.8*
Services 2/	139.3	140.6	4.8	.9	.2*	.3*	.9*
Rent 3/	125.0	125.4	4.6	.3	.1*	.0*	.3*
Services less rent	141.9	143.4	4.9	1.1	.2*	.4*	1.1*
Household services less rent	146.8	149.3	6.4	1.7	.1	.8	1.7
Transportation services	137.1	137.2	.7	.1	.1	.1	.1
Medical care services	166.3	167.4	4.5	.6	.1	.2	.6
Other services	132.1	133.3	5.2	.9	.1*	.1*	.9*
Special indexes:							
All items less food 4/	130.9	131.8	4.0	.7	.2	.7	.6
Nondurable commodities	139.6	136.5	11.2	- 2.2	.3	4.1	- 2.1
Apparel commodities less footwear	125.9	128.1	4.1	1.7	- .2	1.2	1.7
Services less medical care services 5/	138.5	140.0	4.9	1.1	.2*	.3*	1.1*
Insurance and finance	146.9	151.9	5.3	3.4	.1	1.2	3.4
Utilities and public transportation	129.5	130.4	3.2	.7	.1	.4	.7
Housekeeping and home maintenance service	154.0	155.5	6.8	1.0	.1	.5	.8
Appliances (including radio and T.V.)	105.3	105.5	- .5	.2	.4	- .4	.4
Expenditure classes							
All items	135.1	135.5	7.4	0.3	0.2	1.9	0.3
Food	149.4	148.3	18.6	- .7	.3	6.1	- .7
Housing 6/	133.2	136.6	4.8	1.0	.2*	.2*	1.0*
Shelter 7/ 8/	141.1	142.9	5.3	1.4	.1	.9	1.3
Rent 3/	125.0	125.4	4.6	.3	.1*	.0*	.3*
Homeownership 9/	147.0	149.2	5.4	1.5	.1	1.1	1.4
Fuel and utilities 10/	126.3	126.8	5.3	.4	- .1	.6	.4
Gas and electricity	125.8	126.5	4.8	.6	.4	.2	.7
Household furnishings and operation	125.3	126.1	3.7	.6	.3	.3	.6
Apparel and upkeep	126.5	128.3	4.2	1.4	0	.9	1.1
Transportation	124.5	123.9	2.4	- .5	.4	- .1	.1
Private	122.3	121.6	2.6	- .6	.2	.1	.1
Public	144.9	145.5	1.0	.4	.1	.5	.1
Health and recreation	130.5	131.1	3.4	.5	.2*	.2*	.3*
Medical care	137.6	138.3	4.9	.5	.1	.2	.4
Personal care	125.7	126.3	4.3	.5	.1*	.3*	.5*
Reading and recreation	126.1	126.9	2.5	.6	.2	0	.1
Other goods and services	129.4	129.9	3.9	.4	.2	- .2	.3
Special indexes:							
All items less shelter	133.5	133.6	9.9	.1	.3	2.1	.1
All items less medical care	135.0	135.4	7.5	.3	.2	2.0	.2
All items less mortgage interest costs 11/	134.2	134.4	7.2	.1	.4	1.7	.1
CPI-domestically produced farm foods 12/	151.0	150.7	22.9	- .2	.8*	8.1*	- .3*
CPI-selected beef cuts 13/	174.8	176.4	29.2	.9	.5*	7.2*	.9*
Purchasing power of consumer dollar:							
1967=$1.00	$0.740	$0.738	- 6.8	- .2	-	-	-
1957-59=$1.00	.637	.635	-	-	-	-	-

1/ Also includes infants' wear, sewing materials, and jewelry not shown separately.
2/ Revised indexes: 4/73=137.1; 5/73=137.6.
3/ Revised indexes: 1/73=121.8; 2/73=122.1; 3/73=122.8; 4/73=123.2; 5/73=123.7; 6/73=124.0; 7/73=124.4.
4/ Revised indexes: 1/73=127.5.
5/ Revised indexes: 2/73=145.4.
6/ Revised indexes: 1/73=131.5; 3/73=132.4.
7/ Also includes hotel and motel rates not shown separately.
8/ Revised indexes: 1/73=137.0; 2/73=137.4
9/ Includes home purchase, mortgage interest, taxes, insurance, and maintenance and repairs.
10/ Also includes residential telephone, fuel oil, coal, water, and sewerage service not shown separately.
11/ Revised indexes: 1/73=176.9.
12/ Calculated from the CPI food at home component by excluding fish, nonalcoholic beverages, bananas, chocolate candy bars, chocolate syrup and about half of the index weight for sugar.
13/ Calculated from the CPI beef and veal component by excluding veal cutlets and beef liver.
* Not seasonally adjusted.
NOTE: Index applies to month as a whole, not to any specific date.

*Source: U.S. Department of Labor, Office of Information, [illegible] (October 19, 1973), p.6.

CHART 1

ALL ITEMS INDEX AND ITS RATE OF CHANGE, 1964-73* (1967 = 100)



1/ Computed from the unadjusted series.

*Source: U.S. Department of Labor, Office of Information, *NEWS* (October 19, 1973), p. 9.

TABLE 4

COMPARISON OF PURCHASING POWER

Consumer Price Index for base year, 1967	100.0
Dollar value for base year, 1967	1.00
CPI for 1970 (average for 12 months)	116.3
Purchasing power of 1970 dollars (100.0 ÷ 116.3)	0.860
CPI for 1972	125.3
Purchasing power of 1972 dollars (100.0 ÷ 125.3)	0.798
1970 value less 1972 value equals decline in purchasing power	0.062

Among the four urban areas for which data are reported on a quarterly basis that ends in July, Minneapolis/St. Paul had the largest increase (6.1 percent) and Houston had the smallest increase (5.0 percent) between July 1972 and July 1973. Since these are percent changes, consumer prices could be either higher or lower in Minneapolis/St. Paul than in Houston, depending upon the relative price levels in the two urban areas in July 1972.

Family Budgets

Unlike the Consumer Price Index for selected areas, the Bureau of Labor Statistics' Family Budgets can be used to estimate differences in living costs among different urban centers.

The most recent data on family budgets are found in the *Autumn 1972 Urban Family Budgets and Comparative Indexes for Selected Urban Areas* which was published June 15, 1973.

The Family Budgets are based on estimates of costs for a hypothetical family rather than on compilation of actual expenditures by families. The "average, well established family," as defined for this budget, includes a 38-year-old fully-employed husband, a non-working wife, a 13-year-old son, and an 8-year-old daughter.

Three Economic Levels. The Bureau of Labor Statistics supplies budget costs for three family economic levels: low, intermediate, and high. (The "lower" budget does not represent a minimal or subsistence level of existence.) As shown in Table 6, the average national budgets for an urban family of four for autumn 1972 are: $7,386 for a lower budget level, $11,446 for an intermediate budget level, and $16,558 for a higher budget level.

Budgets for each of the three levels also are listed by urban and geographical areas, as depicted in Table 7. These budgets allow for comparison of the "cost of living" among different metropolitan centers and can be of use in comparing the salary requirements of educational personnel in different urban areas. Total budget levels were lowest in the South. In general, budgets for metropolitan areas are higher than those for nonmetropolitan urban areas (places with 2,500 to 50,000 population). The difference in Autumn 1972 budgets between metropolitan and nonmetropolitan areas was 10 percent at the lower level budget, 15 percent at the intermediate level, and 22 percent at the higher level. The percent that one area is above another may be computed as shown in Table 8.

Bases for Estimates. The family budgets are compiled using figures from the Consumer Price Indexes and based on assumptions of how families at different economic levels maintain their standard of living in urban areas. The Bureau of Labor Statistics does not publish comparative data for rural families.

TABLE 5

CONSUMER PRICE INDEX--THE UNITED STATES AND SELECTED AREAS FOR URBAN WAGE EARNERS AND CLERICAL WORKERS, ALL ITEMS MOST RECENT INDEX AND PERCENT CHANGES FROM SELECTED DATES

Area 1/	Pricing Schedule 2/	Indexes			Percent change from:		
		1967=100	1957-59=100	Other bases			
		September 1973			September 1972	June 1973	August 1973
U.S. City Average	M	135.5	157.6		7.4	2.3	0.3
Chicago	M	134.6	152.9		7.4	2.2	.1
Detroit	M	137.3	157.8		7.9	2.7	.4
Los Angeles-Long Beach	M	131.2	154.2		6.0	2.1	.2
N.Y.-Northeastern N.J.	M	142.3	169.3		7.1	2.4	.4
Philadelphia	M	138.1	161.3		7.6	2.5	.7
		July 1973			July 1972	April 1973	
Boston	1	134.1	160.6		5.6	1.3	
Houston	1	131.5	150.5		5.0	.8	
Minneapolis-St. Paul	1	133.1	154.2		6.1	1.8	
Pittsburgh	1	132.6	152.5		5.7	1.1	
		August 1973			August 1972	May 1973	
Buffalo	2	136.6		3/ 150.1	7.7	2.6	
Cleveland	2	135.9	153.5		7.7	2.4	
Dallas	2	133.7		3/ 144.5	6.5	2.4	
Milwaukee	2	133.2	150.4		6.9	2.5	
San Diego	2	134.4		4/ 141.3	7.4	2.8	
Seattle	2	128.8	151.4		7.4	2.0	
Washington	2	136.4	158.9		6.8	2.3	
		September 1973			September 1972	June 1973	
Atlanta	3	137.0	157.6		8.0	3.3	
Baltimore	3	137.5	159.6		7.7	2.9	
Cincinnati	3	134.4	152.6		6.4	2.7	
Honolulu	3	129.6		5/ 139.7	5.3	1.6	
Kansas City	3	132.5	157.3		5.6	2.1	
St. Louis	3	132.3	154.5		7.0	3.3	
San Francisco-Oakland	3	134.5	160.0		7.1	2.9	

1/ Area coverage includes the urban portion of the corresponding Standard Metropolitan Statistical Area (SMSA) except for New York and Chicago where the more extensive Standard Consolidated Areas are used. Area definitions are those established for the 1960 Census and do not include revisions made since 1960.

2/ Foods, fuels, and several other items priced every month in all cities; most other goods and services priced as indicated:
M - Every month.
1 - January, April, July, and October.
2 - February, May, August, and November.
3 - March, June, September, and December.

3/ November 1963=100.

4/ February 1965=100.

5/ December 1963=100.

NOTE: The Consumer Price Index cannot be used for measuring differences in living costs among areas; it indicates price change within areas. Estimates of differences in living costs among areas are found in the family budgets.

*Source: U.S. Department of Labor, Office of Information, *NEWS* (October 19, 1973), p. 8.

TABLE 6

ANNUAL COSTS OF LOWER, INTERMEDIATE, AND HIGHER BUDGETS FOR A FOUR PERSON FAMILY[1], AUTUMN, 1972*

Area	Lower level budget	Intermediate budget	Higher level budget
Urban United States	$ 7,386	$11,446	$16,558
Metropolitan areas 2/	7,509	11,731	17,112
Nonmetropolitan areas 3/	6,837	10,182	14,084
Northeast:			
Boston, Mass	8,166	13,576	20,210
Buffalo, N.Y	7,397	12,026	17,173
Hartford, Conn	8,081	12,503	17,499
Lancaster, Pa	7,297	11,197	15,819
New York-Northeastern N.J	7,841	13,179	20,165
Philadelphia, Pa.-N.J	7,622	11,825	17,148
Pittsburgh, Pa	7,277	11,189	16,169
Portland, Maine	7,515	11,484	15,909
Nonmetropolitan areas 3/	7,234	11,228	15,407
North Central:			
Cedar Rapids, Iowa	7,204	11,480	16,600
Champaign-Urbana, Ill	7,684	11,605	16,808
Chicago, Ill-Northwestern Ind	7,685	11,964	17,161
Cincinnati, Ohio-Ky.-Ind	7,023	10,942	15,305
Cleveland, Ohio	7,390	11,872	16,698
Dayton, Ohio	7,089	10,829	15,427
Detroit, Mich	7,271	11,562	16,749
Green Bay, Wis	7,284	11,516	17,012
Indianapolis, Ind	7,302	11,405	16,221
Kansas City, Mo.-Kans	7,367	11,382	16,650
Milwaukee, Wis	7,381	11,962	17,226
Minneapolis-St. Paul, Minn	7,507	11,767	17,094
St. Louis, Mo.-Ill	7,318	11,258	16,106
Wichita, Kans	6,981	10,616	15,124
Nonmetropolitan areas 3/	7,094	10,522	14,709
South:			
Atlanta, Ga	6,923	10,430	14,908
Austin, Tex	6,485	9,800	14,119
Baltimore, Md	7,602	11,327	16,492
Baton Rouge, La	6,671	10,224	15,025
Dallas, Tex	6,881	10,422	15,114
Durham, N.C	7,164	10,870	15,470
Houston, Tex	6,830	10,270	14,695
Nashville, Tenn	6,804	10,471	15,016
Orlando, Fla	6,961	10,105	14,511
Washington, D.C.-Md.-Va	7,656	11,738	16,971
Nonmetropolitan areas 3/	6,383	9,493	13,094
West:			
Bakersfield, Calif	7,208	10,705	15,113
Denver, Colo	7,084	10,996	15,876
Los Angeles-Long Beach, Calif	7,829	11,534	17,107
San Diego, Calif	7,576	11,395	16,318
San Francisco-Oakland, Calif	8,201	12,324	17,897
Seattle-Everett, Wash	7,676	11,405	16,118
Honolulu, Hawaii	9,118	13,617	20,579
Nonmetropolitan areas 3/	7,359	10,482	14,563
Anchorage, Alaska	11,096	15,095	20,977

1/ The family consists of an employed husband, aged 38, a wife not employed outside the home, an 8-year-old girl, and a 13-year old boy.

2/ As defined in 1960-61. For a detailed description of current and previous geographical boundaries, see the 1967 edition of *Standard Metropolitan Statistical Areas*, prepared by the Office of Management and Budget.

3/ Places with population of 2,500 to 50,000.

*Source: U.S. Department of Labor, Bureau of Labor Statistics, *Autumn 1972 Urban Family Budgets and Comparative Indexes for Selected Urban Areas* (June 15, 1973), p. 10, 12, 14.

TABLE 7

INDEXES OF COMPARATIVE COSTS BASED ON LOWER, INTERMEDIATE, AND HIGHER BUDGETS FOR A FOUR PERSON FAMILY[1], AUTUMN, 1972*

Area	Lower level budget	Intermediate budget	Higher level budget
Urban United States	100	100	100
Metropolitan areas 2/	102	102	103
Nonmetropolitan areas 3/	93	89	85
Northeast:			
Boston, Mass	110	119	122
Buffalo, N.Y	100	105	104
Hartford, Conn	109	109	106
Lancaster, Pa	99	98	96
New York-Northeastern N.J	106	115	122
Philadelphia, Pa-N.J	103	103	104
Pittsburgh, Pa	99	98	98
Portland, Maine	102	100	96
Nonmetropolitan areas 3/	98	98	93
North Central:			
Cedar Rapids, Iowa	98	100	100
Champaign-Urbana, Ill	104	101	102
Chicago, Ill.-Northwestern Ind	104	105	104
Cincinnati, Ohio-Ky.-Ind	95	96	92
Cleveland, Ohio	100	104	101
Dayton, Ohio	96	93	93
Detroit, Mich	98	100	101
Green Bay, Wis	97	101	103
Indianapolis, Ind	99	100	98
Kansas City, Mo.-Kans	100	99	101
Milwaukee, Wis	100	105	104
Minneapolis-St. Paul, Minn	102	103	103
St. Louis, Mo.-Ill	99	98	97
Wichita, Kans	95	93	91
Nonmetropolitan areas 3/	96	92	89
South:			
Atlanta, Ga	94	91	90
Austin, Tex	88	86	85
Baltimore, Md	103	99	100
Baton Rouge, La	90	89	91
Dallas, Tex	93	91	91
Durham, N.C	97	95	93
Houston, Tex	92	90	89
Nashville, Tenn	92	91	91
Orlando, Fla	94	88	88
Washington, D.C.-Md.-Va	104	103	102
Nonmetropolitan areas 3/	86	82	79
West:			
Bakersfield, Calif	98	94	91
Denver, Colo	96	96	96
Los Angeles-Long Beach, Calif	106	101	103
San Diego, Calif	102	100	99
San Francisco-Oakland, Calif	111	108	108
Seattle-Everett, Wash	104	100	97
Honolulu, Hawaii	123	119	124
Nonmetropolitan areas 3/	100	92	88
Anchorage, Alaska	150	132	127

1/ The family consists of an employed husband, age 38, a wife not employed outside the home, an 8-year-old girl, and a 13-year-old boy.

2/ As defined in 1960-61. For a detailed description of current and previous geographical boundaries, see the 1967 edition of *Standard Metropolitan Statistical Areas*, prepared by the Office of Management and Budget.

3/ Places with population of 2,500 to 50,000.

*Source: U.S. Department of Labor, Bureau of Labor Statistics, *Autumn 1972 Urban Family Budgets and Comparative Indexes for Selected Urban Areas* (June 15, 1973), p. 17, 18, 19.

TABLE 8

COMPUTATION OF AREA DIFFERENCES

Index for metropolitan areas (Lower level budget-Table 5)	102
Less index for nonmetropolitan areas (Lower level budget)	93
Difference in index points	9
Index point difference divided by the lesser index (nonmetropolitan areas) (9 ÷ 93) equals	.0967
Multiply by 100 (.0967 x 100)	9.67
Round off to whole percent	10

The quantities of goods and services, methods of calculation, and sources of data used by the Bureau of Labor Statistics to compute family budgets are detailed in *Three Standards of Living for an Urban Family of Four Persons.*[1]

The Wholesale Price Indexes

While the Consumer Price Index and the Family Budgets can serve the school administrator in estimating changes in employee purchasing power and in gauging the rate of retail price increases in household consumer goods and services, they are of little help in estimating changes in the prices of many commercial goods and services needed by school systems. Wholesale Price Indexes of the Bureau of Labor Statistics can be useful in estimating increases in wholesale commodity prices. The Wholesale Price Indexes are published monthly by the Bureau of Labor Statistics in booklet form; selected tables from the index also can be found in the Bureau's *Monthly Labor Review.*[2]

The U.S. government does not publish a special index of price changes of goods specifically purchased by schools. However, data on commodities of particular interest to educational administrators can be selected from the Wholesale Price Index, as illustrated in Table 9. (Again, the base year used by the Bureau is 1967. Therefore, the wholesale price for all commodities in August 1973 was 42.7 percent more than the 1967 annual average price. The index for 1967=100.0 and for August 1973=142.7.) Table 9 presents data on the Wholesale Price Index for selected commodity groups for August 1973 and for each of the previous 2 months. Data on the Wholesale Price Indexes found in Bureau of Labor Statistics publications are based on seasonally unadjusted figures unless otherwise noted. In analyzing price increases from August 1972 to August 1973, the following percent changes occurred: the wholesale prices of all commodities increased 19 percent (from Wholesale Price Index 119.9 to 142.7); the price of farm products, processed foods, and feeds increased 49 percent (123.8 to 184.5); and the price of industrial goods increased 7 percent (118.5 to 127.4).

Fuels, related products, and power prices increased 19 percent between August 1972 and August 1973. In this group, gas fuels showed the highest rate of price increase, 14 percent. Coal prices increased 11 percent, and electrical prices increased 5 percent.

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1. *Three Standards of Living for an Urban Family of Four Persons* (Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics, 1967).

2. *Monthly Labor Review* (Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics, October, 1973).

Table 9.

Commodity group	1972					1973							
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
All commodities	119.5	120.2	120.6	120.7	120.9	126.	126.9	129.1	130.7	133.5	134.2	134.9	142.7
All commodities (1957-59=100) 2/	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	132.1	133.1	135.5	137.2	140.1	140.8	141.5	149.8
Farm products and processed foods and feeds	114.9	115.7	116.1	116.3	116.6	117.	119.4	121.0	123.1	126.4	127.3	128.0	136.9
Industrial commodities	118.	118.7	118.9	119.1	119.4	120.0	121.3	122.3	124.1	125.3	126.9	126.9	127.4
FARM PRODUCTS AND PROCESSED FOODS AND FEEDS													
Farm products	108.	108.6	109.	108.2	107.2	114.2	115.6	118.8	120.8	124.4	125.4	123.3	133.
Fresh and dried fruits and vegetables	91.9	90.	92.8	94.0	94.8	91.2	94.9	98.5	99.0	100.0	99.5	97.5	107.8
Grains	98.8	98.	98.	95.	93.4	93.6	95.1	96.	96.0	99.0	99.0	97.3	96.4
Livestock	109.	111.2	111.	110.	110.4	120.4	122.8	126.	130.5	135.0	136.5	135.3	146.3
Live poultry	106.5	112.1	103.8	102.8	103.6	117.9	177.8	194.4	184.1	188.7	183.5	169.1	241.3
Plant and animal fibers	102.6	107.4	106.7	112.2	110.9	110.1	112.0	105.8	105.8	107.0	104.3	108.3	109.7
Fluid milk	102.	102.6	103.8	103.	103.6	104.7	105.5	107.1	108.5	111.4	111.7	110.4	118.5
Eggs	99.1	114.9	99.1	103.1	103.9	108.0	108.1	102.0	104.4	107.1	108.1	111.2	114.1
Hay, hayseeds, and oilseeds	115.8	110.9	114.9	104.	101.6	103.4	109.1	108.1	106.8	103.1	100.0	107.1	109.4
Other farm products	111.	110.7	111.1	110.6	107.3	108.5	107.5	109.3	107.1	108.0	108.1	111.0	110.6
Processed foods and feeds	122.	123.8	123.8	124.1	124.4	122.4	123.0	121.7	123.8	125.1	125.1	126.5	130.2
Cereal and bakery products	115.3	116.	116.	118.3	118.	121.0	120.	121.3	123.	124.3	125.9	129.5	130.2
Meats, poultry, and fish	127.5	127.7	130.	129.6	130.3	124.	125.	125.	127.2	126.8	126.9	129.7	138.
Dairy products	118.	119.2	120.3	121.6	123.0	123.8	124.0	124.8	127.	126.3	127.5	127.1	134.1
Processed fruits and vegetables	120.	120.1	121.8	121.8	124.7	125.4	125.9	126.2	126.2	127.	127.9	127.7	129.3
Sugar and confectionery	121.	121.	123.	121.7	122.1	121.9	124.4	125.7	126.9	128.5	131.5	131.1	133.2
Beverages and beverage materials	118.9	119.1	118.0	119.4	119.7	119.8	120.0	120.8	121.4	121.5	121.4	121.1	121.2
Animal fats and oils	95.	102.2	100.6	134.9	122.9	120.6	130.1	124.1	126.7	98.0	225.3	227.4	428.9
Crude vegetable oils	91.	98.	91.6	91.7	90.2	99.3	123.1	130.3	143.3	143.1	168.8	169.7	284.5
Refined vegetable oils	107.7	107.0	108.2	109.	108.8	116.	120.3	132.7	136.1	142.0	164.8	164.8	164.8
Vegetable oil end products	102.	102.	123.2	127.6	119.2	118.7	122.2	127.0	125.8	131.6	137.4	137.2	161.6
Miscellaneous processed foods	114.9	116.	117.	116.1	115.8	120.6	117.1	118.7	119.1	118.1	119.9	123.5	128.5
Manufactured animal feeds	111.	117.8	115.	110.	101.	100.3	102.5	102.1	106.7	107.4	257.8	197.0	261.8
Fuels and related products and power	127.	128.1	130.	131.3	131.9	132.2	126.0	125.2	131.8	142.3	142.8	142.8	142.9
Coal	191.	192.	192.4	201.	205.	205.5	206.9	207.4	213.9	214.2	215.1	216.0	214.4
Gas fuels	114.	116.	117.5	119.0	119.2	120.1	118.6	118.8	130.1	121.4	128.0	128.7	130.4
Electric power	126.	122.	121.	123.	122.9	123.8	121.6	126.8	127.6	128.2	128.4	129.0	129.1
Crude petroleum	116.	116.	114.	114.	114.7	114.	114.	114.9	117.1	120.6	120.3	123.8	125.8
Petroleum products, refined	113.	111.	111.	111.	111.0	112.3	118.7	119.4	127.8	133.9	146.6	146.1	145.9
Lumber and wood products	128.1	128.	129.	126.	128.8	151.0	161.0	173.	182.0	186.9	183.1	177.8	178.8
Lumber	104.	105.	106.	100.	101.9	109.	182.3	185.8	207.2	215.	214.8	209.6	210.8
Millwork	130.	130.	130.	130.	131.	131.	133.	134.	135.2	136.5	147.7	148.1	148.4
Plywood	135.	134.	134.	133.	132.	134.	134.	176.	182.	177.7	154.	138.0	140.1
Other wood products	120.	127.	128.	130.	131.	133.1	135.1	140.	147.	149.	151.	152.	153.
Rubber and plastic products	109.	109.	109.	109.	109.	110.	110.	110.	110.	111.	112.	112.	111.
Pulp, paper, and allied products	114.	114.	114.	115.	115.	115.	116.	118.	119.	120.	122.	122.	123.
Pulp, paper, and products, excluding building paper and board	114.	114.	114.	115.	115.	116.	116.	116.	120.	121.	122.	122.	123.
Woodpulp	111.	111.	111.	111.	111.	111.	111.	121.	122.	122.	122.	130.	131.
Wastepaper	139.	139.	139.	140.	131.	133.	135.	136.	150.	168.	187.	187.	187.
Paper	116.	116.	116.	117.	117.	117.	118.	119.	120.	120.	122.	121.	121.
Paperboard	106.	106.	106.	106.	107.	108.	108.	108.	113.	114.	116.	116.	116.
Converted paper and paperboard products	114.	114.	115.	115.	115.	116.	117.	120.	120.	120.	121.	121.	123.
Building paper and board	107.	107.	107.	107.	107.	107.	108.	108.	109.	110.	111.	112.	112.
Metals and metal products	123.	124.	124.	124.	124.	125.	126.	129.	130.	131.	132.	132.	133.
Iron and steel	128.	128.	128.	128.	129.	131.	133.	133.	134.	135.	135.	135.	136.
Steel mill products	130.	130.	130.	130.	130.	132.	132.	133.	133.	134.	134.	134.	134.
Nonferrous metals	116.	117.	117.	117.	117.	117.	121.	128.	131.	133.	135.	135.	137.
Metal containers	130.	131.	131.	131.	131.	131.	130.	135.	135.	135.	135.	135.	135.
Hardware	120.	120.	121.	121.	121.	121.	121.	122.	122.	123.	124.	124.	124.
Plumbing fixtures and brass fittings	125.	125.	125.	125.	125.	126.	126.	126.	126.	125.	126.	126.	126.
Heating equipment	119.	119.	119.	119.	119.	119.	119.	119.	120.	126.	126.	126.	126.
Fabricated structural metal products	123.	123.	123.	123.	123.	124.	124.	125.	125.	126.	126.	127.	127.
Miscellaneous metal products	124.	124.	124.	124.	124.	125.	125.	126.	127.	128.	128.	129.	130.
Furniture and household durables	111.	111.	112.	111.	112.	112.	113.	113.	114.	115.	115.	115.	115.
Household furniture	117.	117.	117.	116.	116.	119.	119.	120.	121.	122.	123.	123.	123.
Commerical furniture	119.	121.	121.	123.	123.	123.	123.	123.	124.	130.	130.	130.	132.
Floor coverings	98.	99.	99.	99.	99.	99.	100.	101.	101.	102.	102.	102.	102.
Transportation equipment 3/	114.	114.	112.	113.	114.	114.	114.	114.	114.	115.	115.	115.	115.
Motor vehicles and equipment	116.	118.	116.	117.	118.	118.	118.	118.	119.	119.	118.	119.	119.

1/ As of January 1967, the index incorporated a revised weighting structure reflecting 1963 values of shipments. Changes also were made in the classification structure, and titles and composition of some indexes were changed. Titles and indexes in this table conform with the revised classification structure, and may differ from data previously published. See Wholesale Prices and Price Indexes, January 1967 (final) and February 1967 (final) for a description of the changes.

2/ As of January 1971 the indexes were converted from the former base of 1957-59=100 to the new base of 1967=100. Technical details and earlier data on the 1967 base furnished upon request to the Bureau.

3/ December 1968=100.

NOTE: For a description of the general method of computing the monthly Wholesale Price Index, see BLS Handbook of Methods (BLS Bulletin 1711, 1971), chapter 11.

*Source. U.S. Department of Labor, Bureau of Labor Statistics, Monthly Labor Review (October, 1973), p. 111, 112.

TABLE 10

PERCENT IN WHOLESALE PRICE INDEX

Wholesale Price Index for all commodities for August 1973	142.7
Less Wholesale Price Index for all commodities for August 1972	119.9
Equals index point difference	22.8
Divided by August 1972 index (119.9) equals	.190
Results multiplied by one hundred	.190 x 100
Equals percent change (August 1972 to August 1973)	19.0

Lumber and wood products increased 20 percent during this twelve month period. The price of rubber and plastic products and the price of furniture and household durables each increased 3 percent. The prices of metal, metal products, pulp, paper, and allied products increased 8 percent. Transportation equipment prices increased marginally, 0.8 percent. The procedure for calculating and using percent changes in the Wholesale Price Index are the same as those for the Consumer Price Index, as illustrated in Table 10.

Projecting Cost Increases

Measuring current prices and past changes in both consumer and wholesale prices is a comparatively simple and relatively accurate statistical process. This, however, is not true with regard to the prediction of future prices or future educational costs. There are many variables and unpredictable factors that make most economic and cost projections little more than educated guesses. This is why most projections are stated as an "assumption" rather than a prediction. It is also the reason why most developers of school budgets "assume" that a specific change (usually percentage change) in prices and service costs will occur during the budget period.

The person estimating future costs or prices, as in the development of a school budget, is at liberty to assume any change he believes appropriate. The choice is a matter of judgment and reasonable expectation. But the estimator usually must explain and justify his chosen assumption to the budget reviewing authorities and other interested persons in order to convince them of its reasonableness. The Consumer Price Index and the Wholesale Price Index often are used as the statistical bases for making and justifying future cost and price assumptions. There are four basic ways sometimes used in projecting future prices and costs.

Simple Percent Change -- One approach in estimating price and cost changes is to assume that prices and costs will change in the future by the same percent they did in a similar period in the past. For example, if one were using the data contained in Table 1 to project price data for 1973, one assumption could be that since the Consumer Price Index for all items increased by 3.3 percent in 1972, prices would increase by a similar 3.3 percent in 1973.

Average Percent Change -- Another approach is to estimate that price changes in the future will be the average of changes that occured during several recent periods. Again if one were using the data contained in Table 1 to project price changes during 1973, one would find that the Consumer Price Index increased 5.4 percent in 1969, 5.9 percent in 1970, 4.3 percent in 1971, and 3.3 percent in 1972. One assumption, therefore, could be that price increases in 1973 will be the average of the increases in each of the four years 1969-1972, which is 4.7 percent. Thus, the assumption would be that prices would increase 4.7 percent in 1973.

The estimator may use any number of years he wishes in computing his average. (A 3-to 5-year span is used most commonly in school budget making.) Some persons feel that the reliability of the estimate is increased by the number of years averaged when computing the percent change. This is not necessarily true. Although one may feel more confident in using price and cost changes over a span of several years, it should be remembered that neither this method nor any other can guarantee accuracy.

Trended Percent Change -- Still another method for estimating price changes is to project the continuation of an upward or downward trend which has occurred in recent years. Since the price increase has lessened in three of the past four years, as reflected in Table 1, a downward trend for 1973 might be projected with some reasonableness. The increase dropped by 1.6 percentage points between 1970 and 1971 (from 5.9 to 4.3) and the increase dropped another 1.0 percentage points between 1971 and 1972 (from 4.3 to 3.3). Projecting this trend of a 0.6 percentage point annual drop in the rate of increase, one could assume a price increase, of only 2.7 percent in 1973. Such an assumed increase, however, would conflict with data for the first 9 months of 1973, as shown in Chart 1 which indicates that the annual rate of price increases measured over a 12 month span was 7.4 percent. This illustrates the hazard of projecting the continuation of past trends: One never knows when the trend is going to change either in direction or in pace.

Stated Governmental Goal -- A different kind of assumption regarding future prices and costs is the use of a stated governmental economic, price, or wage goal. Such goals usually are established arbitrarily. Moreover, the goals typically are contrary to previous trends. An example of a stated governmental goal is the Cost of Living Council's goal to limit inflation in 1973 to 3.0 percent. A school system that used this 3.0 percent increase as a firm assumption in projecting prices for its 1973 budget would have been in economic trouble since, according to the Bureau of Labor Statistics data shown in Chart 1, the increase for 1973 well may exceed 7 percent.

Ultimately, any assumption, projection, or estimate of future prices and costs -- even though relying on abundant and accurate data of past trends -- leaves much to the vagaries of chance. As many economists, government officials, and school budget makers have discovered, projecting accurately the rates of inflation or deflation is a matter of knowledge, judgment, and much good luck.

SELECTED PUBLICATIONS*

The Bureau of Labor Statistics offers the following publications that may be of interest to school administrators. The Consumer and Wholesale Price Indexes are available from the Bureau of Labor Statistics', Washington, D.C. and regional offices (as indicated in the chart on page 15); other publications may be ordered from the Bureau's regional offices or from the U.S. Government Printing Office (Washington, D.C. 20402). Prices listed for monthly publications cover a yearly subscription. Other prices are for single copies of a publication.

	Price	Date of Issue
Budget Pricing Procedures, Specifications and Average Prices (Bulletin 1570-3)	$ 0.75	1968
BLS Handbook of Labor Statistics 1971 (Bulletin 1705)	3.25	1971
BLS Handbook of Methods (Bulletin 1711)	2.00	
The BLS Seasonal Factor Method (1966)	Free	1966
City Workers' Family Budget for a Moderate Living Standard, Autumn 1966 (Bulletin 1570-1)	.30	1967
Consumer Expenditures and Income (Statistical and analytical reports) (Reports 237-1 thru 93 and 238-1 thru 16)	Free	1962-68
Consumer Expenditures and Income: Survey Guidelines (Bulletin 1684)	1.75	1971
Consumer Price Index, A short Description	Free	1970
Consumer Price Index, Conversion Factor to and from 1967 Base	Free	1971
Consumer Price Index (Detailed report)	Free	Monthly
Consumer Price Index (Press release)	Free	Monthly
Consumer Price Index: History and Techniques (Bulletin 1517)	.60	1967
Consumer Price Index: Technical Notes, 1959-63 (Bulletin 1554)	.50	1967
Consumer Prices in the United States, 1959-68 (Bulletin 1647)	.70	1970
Current Wage Developments	4.50	Monthly
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Marketing Uses of Consumer Expenditure Survey Data (Report 238-15)	Free	1967
Monthly Labor Review	9.00	Monthly
Occupational Outlook Quarterly	1.50	Quarterly
Price Perspective, 1966 (Bulletin 1543)	.45	1968
Retail Food Prices by Cities, Estimated (Press release)	Free	Monthly
Retail Prices and Indexes for Fuels and Electricity (Press release)	Free	Monthly
Retail Prices of Food, 1964-68, Indexes and Average Prices (Bulletin 1632)	.65	1969
Retired Couple's Budget for a Modest Living Standard (Bulletin 1570-4)	.35	1968
Revised Equivalency Scale for Estimating Incomes or Budget Costs by Family Type (Bulletin 1570-2)	.35	1968
Special Price Reports	Free	Irregularly
The Theory of Hedonic Quality Measurement and Its Uses in Price Indexes	.35	1971
Three Budgets for a Retired Couple in Urban Areas of the United States 1969-70 (Supplement to Bulletin 1570-6)	Free	1971
Three Budgets for an Urban Family of Four Persons, 1969-70 (Supplement to Bulletin 1570-5)	Free	1972
Three Standards of Living for an Urban Family of Four Persons	1.00	1967
Tuesday Spot Market Price Indexes and Prices (Press release)	Free	Weekly
Wholesale Prices and Price Indexes (Press release)	Free	Monthly
Wholesale Prices and Price Indexes (Detailed report)	Free	Monthly
U.S. Export Indexes (Press release)	Free	1972

*Source: *Major Programs 1972 Bureau of Labor Statistics* (Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics, 1972).

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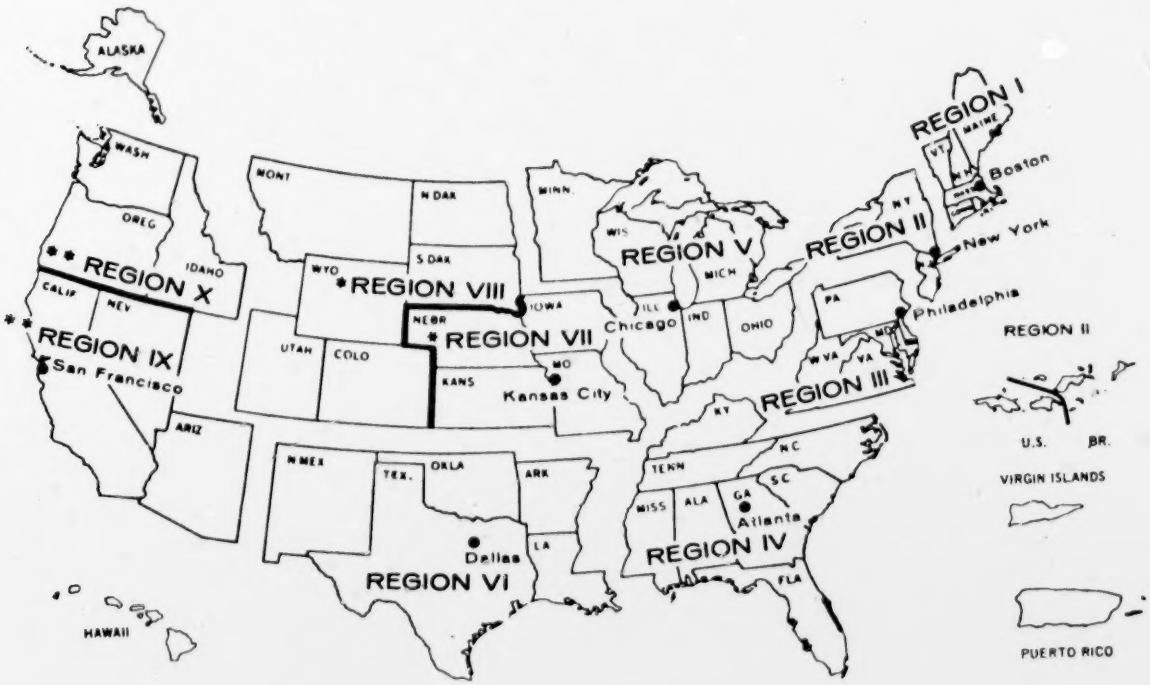

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Prepared by Heather S. Doob, Educational Research Service, Inc.

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